

WHAT IS CLAIMED IS:

1. A ridge waveguide type semiconductor laser comprising:
an active layer;
5 a semiconductor layer formed on said active layer and
having a ridge-shaped waveguide therein;
an insulation film formed on said semiconductor layer;
a first electrode layer in contact with said semiconductor
layer through an opening provided in said insulation film; and
10 a second electrode layer formed on said first electrode
layer such that it is shaped like stripes and runs in a
direction of said waveguide;
wherein a distance from an end face of a resonator to an
edge of said second electrode layer is within 20 μm .
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2. The ridge waveguide type semiconductor laser according
to claim 1, further comprising:
an electrode lead-out line extending from said second
electrode layer; and
20 a bonding pad provided on said insulation film such that
it extends from said electrode lead-out line.
3. The ridge waveguide type semiconductor laser according
to claim 1, wherein:
25 said first electrode layer has a structure in which a
titanium electrode layer and a gold electrode layer are
laminated in that order; and
a film thickness of said gold electrode layer is 700 nm or
more.
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4. The ridge waveguide type semiconductor laser according
to claim 3, wherein a film thickness of said insulation film is

250 nm or less.

5. The ridge waveguide type semiconductor laser according to claim 1, wherein:

5 said first electrode layer has a structure in which a titanium electrode layer and a gold electrode layer are laminated in that order; said second electrode layer is a gold-plated layer;

10 a film thickness of said gold electrode layer is 200 nm or more; and

 a film thickness of said gold-plated layer is 800 nm or more.

6. The ridge waveguide type semiconductor laser according to claim 5, further comprising:

 a barrier metal layer formed between said titanium electrode layer and said gold electrode layer.

7. The ridge waveguide type semiconductor laser according to claim 6, wherein said barrier metal layer is a platinum layer.

8. A ridge waveguide type semiconductor laser comprising:
an active layer;

25 a semiconductor layer formed on said active layer and having a ridge-shaped waveguide therein;

an insulation film formed on said semiconductor layer;

 a first electrode layer in contact with said semiconductor layer through an opening provided in said insulation film; and

30 a second electrode layer formed on said first electrode layer such that it runs continuously from one end face of a resonator to the other in a direction of said waveguide;

 wherein widths of the portions of said second electrode

layer near said end faces of said resonator are smaller than that of the other portion of said second electrode layer.

9. The ridge waveguide type semiconductor laser according to claim 8, further comprising:

an electrode lead-out line extending from said second electrode layer; and

a bonding pad provided on said insulation film such that it extends from said electrode lead-out line.

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10. The ridge waveguide type semiconductor laser according to claim 8, wherein a planar shape of said second electrode layer is made up of a first rectangle and two second rectangles provided on respective sides of said first rectangle, said second rectangles having a width smaller than that of said first rectangle.

11. The ridge waveguide type semiconductor laser according to claim 8, wherein a planar shape of said second electrode layer is tapered such that a width of said second electrode layer is gradually reduced as said second electrode layer approaches said end faces of said resonator.

12. A ridge waveguide type semiconductor laser comprising:

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an active layer;

a semiconductor layer formed on said active layer and having a ridge-shaped waveguide therein;

an insulation film formed on said semiconductor layer;

a first electrode layer in contact with said semiconductor layer through an opening provided in said insulation film;

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an electrode lead-out line extending from said first electrode layer;

a bonding pad provided on said insulation film such that it extends from said electrode lead-out line; and

a second electrode layer formed on said bonding pad.

5 13. The ridge waveguide type semiconductor laser according to claim 12, wherein:

said first electrode layer has a structure in which a titanium electrode layer and a gold electrode layer are laminated in that order; and

10 a film thickness of said gold electrode layer is 700 nm or more.

14. The ridge waveguide type semiconductor laser according to claim 13, wherein said second electrode layer is a gold-plated electrode layer.

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